IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No.: 017386-0115

In re patent application of

Norbert LAUINGER

Serial No.: Unassigned

Filed: January 8, 2002

For: 3D GRATING OPTICAL SENSOR COMPRISING A DIFFUSION GLASS FOR CONDUCTING CHROMATOMETRY WITH COLOR CONSTANCY PERFORMANCE

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination of the above-identified application, Applicant respectfully requests that the following amendments be entered into the application:

IN THE CLAIMS:

Please replace claims 4, 6, 7, 8, 9, 10, 14, and 17 as originally filed with the amended claims as follows:

--4. (Amended) The grating optical sensor as claimed in claim 1, characterized in that the spectral transmission of the lens (1), the diffusion glass (9) and the modulator (4) is limited to the visible region of electromagnetic radiation.

6. (Amended) The grating optical sensor as claimed in claim 1, characterized in that the receivers (8) are set to an identical spectral sensitivity for a radiation source (3) emitting white light.

7. (Amended) The grating optical sensor as claimed in claim 1, characterized in that the receivers (8) assigned to the same chromatic diffraction order (R, G, B) in the

trichromatic diffraction pattern (6) are interconnected to form a local chromatically additive brightness value (10, 10').

8. (Amended) The grating optical sensor as claimed in claim 1, characterized in that the evaluation device includes a comparison arrangement (12) for determining the trichromatic diffraction pattern (6) with best agreement between the local chromatically additive brightness values (10, 10').

9. (Amended) The grating optical sensor as claimed in claim 1, characterized in that the receivers (8) assigned to a trichromatic diffraction pattern (6) are interconnected to form a local trichromatically additive brightness value (11, 11').

10. (Amended) The grating optical sensor as claimed in claim 8, characterized in that the evaluation device includes a white standard forming unit (13) whose output signal is respectively assigned to the local diffraction pattern (6) with best agreement between the chromatically additive brightness values (10, 10') and a simultaneously maximum trichromatically additive brightness value (11, 11').

14. (Amended) The grating optical sensor as claimed in claim 1, characterized in that the evaluation device includes a color value forming unit (14) whose output signal respectively corresponds to the sum of the local chromatically additive brightness values (10, 10'), referred to the white standard signal, of a diffraction pattern (6).

17. (Amended) The method as claimed in claim 15, characterized in that the sum of the chromatically additive brightness values referred to a white standard signal is formed in order to generate a color value signal from the diffraction pattern assigned to a colored part of the object space.--

REMARKS

Applicant respectfully requests that the foregoing amendments to Claims 4, 6, 7, 8, 9, 10, 14, and 17 be entered in order to avoid this application incurring a surcharge for the presence of one or more multiple dependent claims. A marked-up version of the claims showing the changes made is attached.

Respectfully submitted,

January 8, 2002
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VERSIONS WITH MARKINGS TO SHOW CHANGES MADE

4. The grating optical sensor as claimed in [one of] claim[s] 1[to 3], characterized in that the spectral transmission of the lens (1), the diffusion glass (9) and the modulator (4) is limited to the visible region of electromagnetic radiation.

6. The grating optical sensor as claimed in [one of the preceding claims] claim 1, characterized in that the receivers (8) are set to an identical spectral sensitivity for a radiation source (3) emitting white light.

7. The grating optical sensor as claimed in [one of the preceding claims] claim 1, characterized in that the receivers (8) assigned to the same chromatic diffraction order (R, G, B) in the trichromatic diffraction pattern (6) are interconnected to form a local chromatically additive brightness value (10, 10').

8. The grating optical sensor as claimed in [one of the preceding claims] claim 1, characterized in that the evaluation device includes a comparison arrangement (12) for determining the trichromatic diffraction pattern (6) with best agreement between the local chromatically additive brightness values (10, [lacuna]10').

9. The grating optical sensor as claimed in [one of the preceding claims] claim 1, characterized in that the receivers (8) assigned to a trichromatic diffraction pattern (6) are interconnected to form a local trichromatically additive brightness value (11, 11').

10. The grating optical sensor as claimed in claim[s] 8[and 9], characterized in that the evaluation device includes a white standard forming unit (13) whose output signal is respectively assigned to the local diffraction pattern (6) with best agreement between the chromatically additive brightness values (10, 10') and a simultaneously maximum trichromatically additive brightness value (11, 11').

14. The grating optical sensor as claimed in [one of the preceding claims] claim 1, characterized in that the evaluation device includes a color value forming unit (14) whose output signal respectively corresponds to the sum of the local chromatically additive brightness values (10, 10'), referred to the white standard signal, of a diffraction pattern (6).

17. The method as claimed in [either of]claim[s] 15[or 16], characterized in that the sum of the chromatically additive brightness values referred to a white standard signal is formed in order to generate a color value signal from the diffraction pattern assigned to a colored part of the object space.